SpeakCode: Bridging the Gap between Natural Language and Code Generation

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Abstract

The recent surge in interest in programming has led to the development of novel tools and techniques to facilitate more seamless interaction between humans and computers. In this paper, we introduce SpeakCode, a revolutionary system that bridges the gap between natural language and code generation. Utilizing a linguistic compiler, SpeakCode allows users to write instructions in plain natural language, which are then compiled into executable machine code. The linguistic compiler employs intention-aware semantic parsing to interpret and disambiguate complex natural language input, overcoming its inherent ambiguity and variability to guarantee that the resulting code is both precise and efficient. Moreover, we explore the advantages of our system, including increased accessibility of programming fostering diversity within the programming community. By enabling individuals from diverse cultural and educational backgrounds to express software ideas in their native language, SpeakCode paves the way for unprecedented creativity and innovation. Additionally, we address potential risks associated with malicious code and establish safeguards and ethical guidelines to promote responsible use. In future work, we intend to address several key areas including accommodating regional linguistic variations and introducing natural language code debugging and optimization techniques.

Keywords

Linguistic compiler, Intention-aware Systems, Natural Language Disambiguation

References

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